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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/695,726	10/28/2003	Ross S. Dando	M122-2432	5544
21567	7590	04/05/2005	EXAMINER	
WELLS ST. JOHN P.S. 601 W. FIRST AVENUE, SUITE 1300 SPOKANE, WA 99201			MOORE, KARLA A	
			ART UNIT	PAPER NUMBER
			1763	

DATE MAILED: 04/05/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/695,726

Applicant(s)

DANDO ET AL.

Examiner

Karla Moore

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 November 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 26-49 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 26-49 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 October 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 6 total.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 26-30, 33 and 39-42 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 6,111,225 to Ohkase et al.

3. Ohkase et al. disclose an apparatus capable of chemical vapor deposition in Figure 2 comprising: a chamber (8) defined in at least part by a chamber sidewall; a passageway (adjacent G1) in the chamber sidewall extending from externally of the chamber to the chamber, and through which semiconductor substrates pass into and out of the chamber for deposition processing; and a chamber liner apparatus (50A) forming a deposition subchamber within the chamber, at least a portion of the chamber liner apparatus being selectively moveable to fully expose and fully cover the passageway (column 6, rows 6-27).

4. With respect to claim 27, the apparatus further comprises a movable substrate holder (14; column 4, rows 39-49 and 58-62) received within the subchamber, the portion of the chamber liner apparatus being mounted for movement independent of movement of the substrate holder. The substrate holder is driven via a motor, 22. The chamber liner apparatus is not driven via the motor.

5. With respect to claim 28, the apparatus further may comprise a movable substrate holder (14; column 4, rows 39-49 and 59-62) received within the subchamber, the portion of the chamber liner apparatus being mounted for movement with of movement of the substrate holder (see column 9, rows 55-62).

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6. With respect to claim 29, the portion is mounted for elevational movement, upward movement of the portion to a first position fully exposing the passageway, downward movement of the portion to a second position fully covering the passageway. As shown in Figure 4, the portion is capable of vertical movement in both directions; thus, the portion would be capable of downward movement to a position fully covering the passageway if it started at a first position upward of the passageway.

7. With respect to claim 30, the portion is mounted for elevational movement, upward movement of the portion to a first position fully exposing the passageway, downward movement of the portion to a second position fully exposing the passageway. As shown in Figure 4, the portion is capable of vertical movement in both directions; thus, the portion would be capable of downward movement to a position fully exposing the passageway if it started at a first position covering the passageway.

8. With respect to claim 33, Ohkase et al. disclose an apparatus capable of chemical vapor deposition in Figures 2, 8A and 8B, the apparatus comprising: a chamber (8) defined at least in part by a sidewall; a passageway (adjacent G1) in the chamber sidewall extending from externally of the chamber to the chamber, and through which semiconductor substrates pass into and out of the chamber for deposition processing; and a movable chamber liner apparatus (Figures 8A and 8B, 50B or 50C) forming a deposition subchamber within the chamber, the liner apparatus having an opening therethrough, the liner being mounted for movement to a first position in which the opening is aligned with the passageway and to a second position in which the opening is not aligned with the passageway (column 6, rows 6-27 and column 9, rows 29-54).

9. With respect to claim 39, the apparatus further comprises a movable substrate holder (14; column 4, rows 39-49 and 58-62) received within the subchamber, the portion of the chamber liner apparatus being mounted for movement independent of movement of the substrate holder. The substrate holder is driven via a motor, 22. The chamber liner apparatus is not driven via the motor.

10. With respect to claim 40, the apparatus further may comprise a movable substrate holder (14; column 4, rows 39-49 and 59-62) received within the subchamber, the portion of the chamber liner

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apparatus being mounted for movement with of movement of the substrate holder (see column 9, rows 55-62).

11. With respect to claim 41, the liner apparatus is mounted for elevational movement, upward movement of the portion to the first position fully exposing the passageway, downward movement of the portion to a second position fully covering the passageway. As shown in Figure 4, the portion is capable of vertical movement in both directions; thus, the portion would be capable of downward movement to a position fully covering the passageway if it started at a first position upward of the passageway.

12. With respect to claim 42, the liner apparatus is for elevational movement, upward movement of the portion to a first position fully exposing the passageway, downward movement of the portion to a second position fully exposing the passageway. As shown in Figure 4, the portion is capable of vertical movement in both directions; thus, the portion would be capable of downward movement to a position fully exposing the passageway if it started at a first position covering the passageway.

Claim Rejections - 35 USC § 103

13. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

14. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

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15. Claims 31-32, 34-38 and 43-49 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ohkase et al.

16. With respect to claims 31-32, 34-38, 41-42 and 43-48, which are all related to the size and shape of the liner and its opening, Ohkase et al. disclose the invention substantially as claimed and as described above. As detailed above, the liner comprises an opening. The liner is capable of fully covering the passageway to the chamber (see Figure 2 and column 6, rows 14-20). Ohkase teach that the purpose of the liner is to provide uniform heat to the substrate and to prevent the formation of unwanted deposits on chamber walls (column 7, row 64 through column 8, row 11), similar to the claimed invention. Ohkase et al. also teach an opening is sized to allow the wafers to pass through (column 9, rows 37-38 and 46-47). Passage of the wafer is the intended purpose of the opening, as it is in the presently claimed invention. Ohkase et al. do not specifically teach the size or shape of the opening cross section, its relative size to the cross section of the passageway or the relative size of the liner (or portion of the liner) configured to cover the passageway to the size/shape of the passageway; however, as liner is sized and shaped to open and close the passageway and the opening is of appropriate size and shape to allow passage of a wafer, the liner and opening perform no differently than those of the presently claimed invention. In *Gardner v. TEC Systems, Inc.*, 725 F.2d 1338, 220 USPQ 777 (Fed. Cir. 1984), cert. denied, 469 U.S. 830, 225 USPQ 232 (1984), the Federal Circuit held that, where the only difference between the prior art and the claims was a recitation of relative dimensions of the claimed device and a device having the claimed relative dimensions would not perform differently than the prior art device, the claimed device was not patentably distinct from the prior art device. The courts have also ruled that absent persuasive evidence that a particular configuration is significant; changes in shape are a matter of choice that a person of ordinary skill in the art will find obvious. In *re Dailey*, 357 F.2d 669, 149 USPQ 47 (CCPA 1966).

17. It would have been obvious to one of ordinary skill in the art at the time the Applicant's invention was made to have provided the *liner* with an appropriate size and shape to cover or expose the passageway and with an *opening* with an appropriate size and shape to fully expose or fully cover the passageway in order to allow for uniform heating of the substrate, prevention of unwanted deposits on

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chambers walls and transfer of a wafer through a passageway and into the processing chamber as taught by Ohkase et al.

18. Further with respect to claim 32, only a portion of the liner may be selectively movable (50A; see column 6, rows 6-27) to fully expose and to fully cover the passageway to the chamber, another portion of the liner apparatus not being mounted for movement.

19. Further with respect to claims 34 and 35, the liner apparatus is configured to fully cover the passageway from exposure to the chamber in a second position (via rotation or vertical movement).

20. Claims 36-38 are related to the size and/or shape of the liner and the opening of the liner, which are addressed above.

21. Further with respect to claim 41, the liner apparatus is mounted for elevational movement, upward movement of the portion to the first position fully exposing the passageway, downward movement of the portion to a second position fully covering the passageway. As shown in Figure 4, the portion is capable of vertical movement in both directions; thus, the portion would be capable of downward movement to a position fully covering the passageway if it started at a first position upward of the passageway.

22. Further with respect to claim 42, the liner apparatus is for elevational movement, upward movement of the portion to a first position fully exposing the passageway, downward movement of the portion to a second position fully exposing the passageway. As shown in Figure 4, the portion is capable of vertical movement in both directions; thus, the portion would be capable of downward movement to a position fully exposing the passageway if it started at a first position covering the passageway.

23. With respect to claim 43, Ohkase discloses an apparatus capable of chemical vapor deposition substantially as claimed and comprising: a chamber (8) defined at least in part by a chamber sidewall; a passageway (adjacent G1) in the chamber sidewall extending from externally of the chamber to the chamber, and through which semiconductor substrates pass into and out of the chamber for deposition processing, the passageway having a total open cross section where it joins with the chamber; and a movable chamber liner apparatus (Figures 8A and 8B, 50B or 50C) forming a deposition subchamber

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within the chamber, the liner apparatus having an opening therethrough, the opening being at least as large as said total cross section of the passageway, the liner apparatus being mounted for elevational movement to a first position in which the opening is aligned with the passageway and to a second position (for example, rotated 180 degrees) in which the opening is not aligned with the passageway (column 6, rows 6-27 and column 9, rows 29-54).

24. Claims 44-47 are related to the size and/or shape of the liner and the opening of the liner, which are addressed above.

25. With respect to claim 48, the apparatus further comprises a movable substrate holder (14; column 4, rows 39-49 and 59-62) received within the subchamber, the portion of the chamber liner apparatus being mounted for movement independent of movement of the substrate holder. The substrate holder is driven via a motor, 22. The chamber liner apparatus is not driven by the motor.

26. With respect to claim 49, the apparatus further may comprise a movable substrate holder (14; column 4, rows 39-49 and 59-62) received within the subchamber, the portion of the chamber liner apparatus being mounted for movement with of movement of the substrate holder (see column 9, rows 55-62).

Conclusion

27. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. USP 5,884,009 to Ohkase et al. discloses a liner with openings for passage of a wafer.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Karla Moore whose telephone number is 571.272.1440. The examiner can normally be reached on Monday-Friday, 8:30am-5:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Parviz Hassanzadeh can be reached on 571.272.1435. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Karla Moore
Patent Examiner
Art Unit 1763
29 March 2005